REMARKS

The Office Action dated January 23, 2008 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 35, 37-40, 44, 48 and 52 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added and no new issues are raised which require further consideration or search.

Claim 17 has been objected to for containing minor informalities. Applicants have amended claim 17 to correct those informalities. Withdrawal of the objection to claim 17 is kindly requested.

Claims 38, 44, 48 and 52 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for three separate reasons.

With regard to reason (a), Applicants have amended claims 38, 44, 48 and 52 to clarify the subject matter of those claims and to better clarify the "pseudo error."

With regard to reason (b), Applicants submit that the claims are correct as written and no amendments are required to clarify the present claim language, which recites "that the transmission power at the transmitting end is decreased until the pseudo error occurrence is above a predetermined level.

With regard to reason (c), Applicants submit that the first and second units recited in claim 24 are not necessarily intended to be the same claim elements recited in claims 38, 44, 48 and 52. Applicants have amended all of the claims to remove the term "unit"

in place of more descriptive claim elements. Therefore, Applicants submit that rejection of the first unit and the second unit previously recited in claims 24, 38, 44, 48 and 52 is moot. Accordingly, Applicants submit that all of the outstanding issues regarding the claim recitations have been addressed. Withdrawal of the rejections to the claims is kindly requested.

Claims 12-17, 19, 24, 27-30, 33-34, 36-38 and 41-55 were rejected under 35 U.S.C. §102(a) as being anticipated by Vembu (U.S. Patent No. 6,259,928). This rejection is respectfully traversed for at least the following reasons.

Vembu does not disclose "monitoring pseudo error occurrence in the received signal at the receiving end...decreasing the transmission power gradually from the initial value at the transmission end when the pseudo error occurrence in an error-free reception does not fulfill a predetermined condition...and increasing the transmission power by a predetermined amount when the pseudo error occurrence in the error-free reception fulfills the predetermined condition."

The Office Action referred to columns 3-5 and 7-10 of Vembu as allegedly disclosing the subject matter recited in independent claims 12, 24, 27-30, 33-34, 36-38 44, 48 and 52. Applicants disagree that those or any other portions of Vembu disclose all of the subject matter disclosed in independent claims 12, 24, 27-30, 33-34, 36-38 44, 48 and 52. The disclosure of Vembu is limited to controlling power on the basis of SNR and error rate measurements. Column 10, lines 54-59 of Vembu, for example, refers to

controlling transmission power on the basis of frame error rate. Similarly, column 10, lines 61-67 of Vembu refers to controlling power on the basis of bit error rate.

The first of these three techniques (i.e., SNR) does not involve monitoring the occurrence of any kind of error. As for the second and third techniques, (e.g., frame error rate and bit error rate) those techniques involve <u>monitoring the occurrence of actual errors, not pseudo errors</u> as defined in the claims of the present application. Page 2 of the present application describes the drawbacks of using bit error rate measurements to control power. The power control methods of Vembu are directed to the type of prior art that the pseudo error techniques of the present application are aimed at surpassing.

A pseudo error is described on page 3 of page 3 of the present application as a type of error that has not yet occurred. In contrast to a pseudo error, the teachings of Vembu which are directed to SNR, bit error rate and frame error rate all rely on errors which have already occurred. The techniques used to control the power level in Vembu do not address pseudo error monitoring of any kind.

The Office Action stated that "a pseudo error (inherent)." Applicants disagree that a pseudo error is inherent. The fact that Vembu relies on actual measurements of SNR or error rates of signals received to control power levels clearly shows that Vembu cannot control power (either increase or decrease power) based on a "pseudo error." In referring to a pseudo error as inherent, the Office Action has alleged that the following description of a "pseudo error" is inherent, as claim 12 recites a pseudo error "as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision

was smaller than a limit value so that an actual error did not occur." Applicants submit that the above noted portion of claim 12 which describes the pseudo error is not well known to one skilled in the art.

Therefore, the Office Action has failed to establish a "pseudo error" as inherent, and by relying on the teachings of Vembu, has further failed to anticipate the subject matter recited in independent claim 12, and similarly independent claims 12, 24, 27-30, 33-34, 36-38 44, 48 and 52. By virtue of dependency the rejection of claims 13-17, 19, 41-51 and 53-55 is also improper and must be withdrawn.

Claims 38, 44, 48 and 52 were rejected under 35 U.S.C. §102(b) as being anticipated by Endo et al. (EP 0847146 A2). This rejection is respectfully traversed. Specifically, Applicants respectfully submit that Endo does not teach the claimed "pseudo-errors", as recited in claims 38, 44, 48 and 52.

As discussed in the specification at page 9, lines 4-8, examples of the present invention enable the control of transmission power to be based on detecting pseudo errors in the transmission. Thus, situations are identified that are estimated as an error that nearly happened, but did not happen. For example, an error-free reception is provided that is monitored for pseudo error occurrence in the received signal. The pseudo error defines an instant when a right bit or symbol decision is made, but a margin for the right bit or symbol is smaller than a limit value so that an actual error nearly occurred. An actual error, however, did not occur.

Additionally, as mentioned at page 10, lines 23-32 of the present specification, certain embodiments of the present invention can be implemented at a low cost. It is respectfully submitted that the cited reference of Endo fails to disclose or suggest all the elements of any of the presently pending claims. Therefore, Endo fails to provide the critical and unobvious advantages discussed above.

As discussed in previous responses, Endo relates to a transmission power control apparatus for a mobile communication system. Endo describes providing a reverse channel error rate judgment section in a radio base station for judging a communication quality of the reverse channel by a detected reverse channel frame error rate. Referring to Figure 1 of Endo, decoder section 105 performs data error detection in a receiving signal digitized by the digital demodulation section 101, and outputs the result of detected errors to reverse channel error rate judgment section 103. Endo describes, if a report is received indicating a frame error rate of the forward channel being unfavorable, then the transmission power of the forward channel is to be increased. If the report indicates a frame error rate report being too favorable, then the transmission power of the forward channel is decreased to reduce interference.

For example, claim 38 recites "a monitor configured to monitor pseudo error occurrence in the transmissions received...a generator configured to generate power control messages based on control signals received from said monitor, which power control messages are to be transmitted to said transmitting end, and wherein the power control messages are generated such that transmission power at said transmitting end is

decreased until the pseudo error occurrence is above a predetermined level, and is increased when the pseudo error occurrence is above the predetermined level." Applicants respectfully submit that Endo does not disclose or suggest at least this feature of the claimed invention.

The Office Action took the position that Endo discloses this feature at columns 12, 13 and 15 of Endo. Applicants respectfully disagree that Endo discloses those features.

A previous Response to an Office Action had responded to this deficiency of Endo by asserting that frame error rate of Endo does not correspond with the claimed "pseudo errors," citing the same previously mentioned passages of Endo. Page 3, lines 12-24 of the present application describes pseudo errors as errors that have not occurred.. The frame error rate of Endo is an actual error rate of errors that have occurred.

The Office Action took the position that one or more of columns 12, 13 and 15 disclose pseudo errors. However, as noted above, Endo does not address pseudo errors or "pseudo error occurrence" but rather actual error occurrence, namely framer error rate, as can be seen at column 11, lines 26-28 and column 12, lines 2-4, as well as Figure 3, element 301, Figure 4, elements 402 (data error) and 407 (frame error rate), Figure 5, element 501, and Figure 6, elements 602 (data error) and 612 (frame error rate). Accordingly, Applicants respectfully submit that Endo also does not disclose or suggest at least "a monitor configured to monitor pseudo error occurrence in transmissions received", as recited, in part, in claim 38.

Accordingly, Applicants submit that the re-introduction of Endo as an anticipatory reference is improper. The merit of Endo as an anticipatory reference with respect to certain subject matter recited in claims 38, 44, 48 and 52 has been previously established to be invalid. Therefore, the rejection of claims 38, 44, 48 and 52 is improper and must be withdrawn.

Claims 18 and 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of U.S. Patent No. 5,873,028 of Nakano et al. ("Nakano"). The Office Action took the position that Endo discloses all of the features of the claims except "the predetermined step is 1 dB" and "the predetermined amount for increasing the transmission power is 1 or 2 dB." The Office Action cited Nakano to remedy these deficiencies of Endo. Applicants respectfully traverse this rejection.

Claims 18 and 20 depend from and further limit claim 12. The deficiencies of Endo with regard to claim 12 are exposed above. Nakano does not remedy the above-identified deficiencies of Endo with regard to claim 12, and, thus, the combination of Endo and Nakano fails to disclose or suggest all of the elements of any of the presently pending claims.

Claim 18 depends from claim 17 (which in turn depends from claim 12) and additionally recites, "the predetermined step is 1 dB." Applicants respectfully submit that the combination of cited references does not disclose or suggest these features.

The Office Action cited Endo as applied to claim 17, but took the position that Endo fails to disclose only "the predetermined step is 1 dB." The Office Action cited Nakano to remedy this deficiency of Endo.

Nakano generally relates to a transmission power control apparatus and method in a mobile communication system. Nakano describes suppressing the transmission power to an absolute necessary minimum level and increasing subscriber capacity by reducing an amount of interference. For example, the transmission power of a first mobile station 1a is controlled such that a difference between a reception CIR at first base station 3a with respect to first mobile station 1a and first base station target CIR becomes smaller, while the transmission power of the second mobile station 1b is controlled such that a difference between a reception CIR at first base station 3a with respect to second mobile station 1b and a second base station target CIR becomes smaller. At column 6, lines 24-40, Nakano does describe adjusting transmission power control, but specifically states the steps are 0.5 dB, at column 6, line 27 ("at 0.5 dB steps"). One half decibel is clearly not one decibel.

Applicants respectfully submit that, as explained above, Endo does not inherently or otherwise disclose or suggest a predetermined step, and therefore, even if Nakano had disclosed 1 dB steps (as recited in claim 18), one of ordinary skill in the art would not be motivated to combine Nakano with Endo, because Endo does not describe reducing the transmission power in predetermined steps.

Moreover, Nakano does not remedy the above-described deficiencies of Endo with regard to claims 12 and 17. Accordingly, Applicants respectfully submit that the Office Action's citation of column 6, lines 25-41, column 7, lines 38-43, column 5, lines 13-24, column 8, lines 51-58, column 9, lines 55-60, column 10, lines 31-37, column 1, lines 14-16, and Figure 6 of Nakano, is misplaced because those passages do not address the above-identified deficiencies of Endo, and because there is not proper motivation to combine Nakano with Endo – only hindsight reconstruction in view of Applicants' disclosure. Therefore, Applicants respectfully request that the rejection of claim 18 be withdrawn.

Claim 20 depends from claim 12. The Office Action cited Endo as applied to claim 12, but took the position that Endo fails to disclose only "the predetermined amount for increasing the transmission power is 1 or 2 dB."

Nakano is discussed above. Even assuming that Nakano disclosed "the predetermined amount for increasing the transmission power is 1 or 2 dB," there is no teaching, motivation, or suggestion to combine Nakano with Endo.

The Office Action took the position that it would have been obvious to combine Endo with Nakano "in order to suppress power to a minimum level while satisfying the required communication quality." However, Nakano discloses that 0.5 dB steps can be used at column 6, line 27, accordingly, if a minimum level of increase were desired, one of ordinary skill in the art were to read Nakano, one of ordinary skill in the art would use the 0.5 dB steps, not 1 or 2 dB (as recited by claim 20). Accordingly, it is respectfully

submitted that there is no teaching motivation or suggestion to combine Endo and Nakano to disclose or suggest all of the elements of claim 20.

Moreover, Nakano does not remedy the above-described deficiencies of Endo with regard to claim 12. Accordingly, Applicants respectfully submit that the Office Action's citation of column 6, lines 25-41, column 7, lines 38-43, column 5, lines 13-24, column 8, lines 51-58, column 9, lines 55-60, column 10, lines 31-37, column 1, lines 14-16, and Figure 6 of Nakano, is misplaced because those passages do not address the above-identified deficiencies of Endo, and because there is not proper motivation to combine Nakano with Endo – only hindsight reconstruction in view of Applicants' disclosure. Therefore, Applicants respectfully request that the rejection of claim 20 be withdrawn.

Claims 21-22 and 25-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of U.S. Patent No. 5,878,329 of Mallinckrodt ("Mallinckrodt"). The Office Action took the position that Endo discloses all the features of the claims, except those related to forward error correction. The Office Action cited Mallinckrodt to remedy the deficiencies of Endo with respect to the features related to forward error correction. Applicants respectfully traverse this rejection.

The Office Action cited Endo as teaching most of the features of claim 21, but cited Mallinckrodt as disclosing "using forward error correction in the transmitted signal; decoding the signal at the receiving end by means of a forward error correction decoder; and interpreting the corrections made by the forward error decoder as pseudo errors."

Endo is discussed above. Mallinckrodt generally relates to power control of an integrated cellular communications system. Mallinckrodt describes the power controlled by monitoring the bit error rate and the signal-to-noise ratio. Mallinckrodt describes controlling the power output levels of transmitters to a minimum necessary for satisfactory communications. Each transmission includes a code representative of the transmitter output level. The receivers compare this code to the received signal strength and adjust their associated transmitter power output levels accordingly. The bit error rate and the signal-to-noise ratio are monitored by receivers to develop a measure of signal quality.

Claim 21 is dependent on claim 12, and additionally recites, among other things, "interpreting the corrections made by the FEC decoder as pseudo errors." As explained above, Endo fails to disclose or suggest any treatment of pseudo errors. Mallinckrodt fails to remedy the deficiencies of Endo.

The Office Action cited the abstract, column 9, lines 7-41, column 11, lines 1-21, column 12, lines 30-35, Figure 7, and Figure 9 of Mallinckrodt, as disclosing this feature. None of those passages, however, discuss interpreting anything as a pseudo error. Indeed, those passages do not even mention pseudo errors. In direct contrast, the places where those passages that mention any kind of error refer to actual error. *See*, column 11, line 8 ("actual error rate").

Thus, Applicants respectfully submit that Mallinckrodt does not remedy the deficiencies of Endo with respect to claim 21. Therefore, Applicants respectfully request that the rejection of claim 21 be withdrawn.

Claim 22 is also dependent on claim 12, and additionally recites, among other things, "using at the receiving end a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making a decision on whether the pseudo error has occurred." As discussed above, neither Endo nor Mallinckrodt discusses any processing of any kind, including making any decisions regarding pseudo errors, but rather the references deal only with actual errors.

Thus, Applicants respectfully submit that Mallinckrodt does not remedy the deficiencies of Endo with respect to claim 22. Accordingly, Applicants respectfully submit that the Office Action's citation of elements 101, 152, and 202, column 11, line 49 to column 12, line 40, column 13, line 57 to column 14, line 8, column 9, lines 35-38 and 50-56, column 12, lines 20-35, column 13, lines 33-40, as well as Figure 1, Figure 2, and Figure 7 of Mallinckrodt, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, "using at the receiving end a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making a decision on whether the pseudo error has occurred." Therefore, Applicants respectfully request that the rejection of claim 22 be withdrawn.

Claim 25 is dependent on claim 24, and additionally recites, among other things, "wherein said controller includes a forward error correction decoder to decode a forward error correction coded signal and to decode pseudo errors." As discussed above, neither Endo nor Mallinckrodt discusses any processing of any kind, including detecting pseudo errors, but rather the references deal only with actual errors.

Therefore, Applicants respectfully submit that Mallinckrodt does not remedy the deficiencies of Endo with respect to claim 25. Accordingly, Applicants respectfully submit that the Office Action's citation of elements 102, 156, and 201, the abstract, column 11, line 10 to column 12, line 3, column 9, lines 7-41, column 11, lines 1-21, column 12, lines 20-35, column 13, lines 33-40, as well as Figure 1, Figure 2, Figure 7, and Figure 9 of Mallinckrodt, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, "wherein said controller includes a forward error correction decoder to decode a forward error correction coded signal and to detect pseudo errors." Therefore, Applicants respectfully request that the rejection of claim 25 be withdrawn.

Claim 26 is also dependent on claim 24, and additionally recites, among other things, "wherein said controller includes a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making a decision on whether the pseudo error has occurred." As discussed above, neither Endo nor Mallinckrodt discusses any processing of any kind, including making

any decisions regarding pseudo errors, but rather the references deal only with actual errors.

Thus, Applicants respectfully submit that Mallinckrodt does not remedy the deficiencies of Endo with respect to claim 26. Accordingly, Applicants respectfully submit that the Office Action's citation of elements 101, 152, and 202, column 11, line 49 to column 12, line 40, column 13, line 57 to column 14, line 8, column 9, lines 35-38 and 50-56, column 12, lines 20-35, column 13, lines 33-40, as well as Figure 1, Figure 2, and Figure 7 of Mallinckrodt, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, "wherein said controller includes a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making a decision on whether the pseudo error has occurred." Therefore, Applicants respectfully request that the rejection of claim 26 be withdrawn.

Claim 35 was rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of U.S. Patent No. 5,822,318 of Tiedemann ("Tiedemann"). The Office Action took the position that Endo discloses all of the features of claim 35 except "a first output for outputting a corrected bit stream, wherein the corrected bit stream is obtained by removing a redundancy from a received bit stream; and a second output for outputting an error signal indicating corrections made by the apparatus to obtain the corrected bit stream." The Office Action cited Tiedemann, and specifically column 6, lines 59-61, column 7, lines 7-9, 23-29, and 40-54, column 5, lines 35-39, and Figure 3 as disclosing

these features, to remedy these deficiencies of Endo. Applicants respectfully traverse this rejection.

Endo is discussed above. Tiedemann generally relates to a method and apparatus for controlling power in a variable rate communication system. Tiedemann describes providing for a closed loop power control method. A first remote station controls the transmission power of a second remote station by transmitting a rate dependent power control signal to the second remote communication station. Because only the second communication knows its transmission rate a priori, it determines its course of action in accordance with both the received power control signal and the knowledge of its transmission rate. Forward error correction decoder 44 of Tiedemann determines an indication of error rate and provides a signal indicative of the error rate to control processor 46. Tiedemann also describes a decoder 56 that has two outputs. Decoder 56 separates two transmitted signals from received data where a second output is for outputting a second signal encoded in the transmission at a transmitting end.

Claim 35 recites, among other things, "a second output configured to output an error signal indicating corrections made by the apparatus to obtain the corrected bit stream." What the Office Action cited as corresponding to this feature is the signal that the decoder 44 sends, which indicates the error rate to the control processor 46, and the two signals (power control signal and traffic data signal) that decoder 56 separates.

However, neither of those decoders (44 or 56) is an output configured to output an error signal that indicates "corrections made by the apparatus to obtain the corrected bit

stream." In the case of decoder 44, what is output is a frame error rate, not an indication of corrections made, as can be seen at column 6, lines 59-61. In the case of decoder 56, what is output is traffic data and a power control signal as can be seen in Figure 3 and at column 7, lines 23-29. Specifically, nowhere does Tiedemann disclose or suggest providing an error signal indicating "corrections made by the apparatus to obtain the corrected bit stream." Accordingly, Tiedemann does not remedy the admitted deficiencies of Endo.

Moreover, claim 35 also recites "the control signal indicating whether pseudo errors are detected in the received signal." As explained above, Endo does not disclose or suggest any processing of pseudo errors, including any detection of them. Tiedemann also is silent as to the detection or other processing of pseudo errors. Accordingly, Tiedemann also fails to remedy this further deficiency of Endo. Thus, Applicants respectfully request that the rejection of claim 35 be reversed.

For the reasons explained above it is respectfully submitted that each of the pending claims recites subject matter that is neither disclosed nor suggested in the cited art. It is, therefore, respectfully requested that all of claims 12-30 and 33-55 be allowed, and that this application be passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

Kamran Emdadi
Registration No. 58,823

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Tysons Corner, Virginia 22182-2700
Telephone: 703-720-7800
Fax: 703-720-7802

KE/cqc